

Claims

[c1] What is claimed is:

1. An Apparatus for the collection of free endocervical and cervical cells by the subject, a doctor or paramedic personnel, said apparatus comprising:

A cylindrical plastic tube, positionable within the vagina;

A cylindrical plastic stick, positioned within the plastic tube.

[c2] 2. Apparatus as claimed in claim 1 wherein said plastic tube is 14 cm long per 1 cm wide, the last 3 cm of the distal end being widened 1, 5 cm and has a proximal end being ridged so as to be easily handled during use.

[c3] 3. Apparatus as claimed in claim 1 wherein said plastic tube is closed by an extra-thin plastic membrane having the following functions:

- to avoid contamination of the brush (as claimed in claim 6) placed inside said tube while said tube is inserted within the vagina.

[c4] ·to insure the dispensability of said apparatus.

[c5] 4. Apparatus as claimed in claim 1 wherein said extra-thin plastic membrane is inserted 1 centimeter from the

inner end of the tube and is thinner in its central part so as to be easily broken when required, its parts remaining however fixed to the tube's edges (as claimed in claim 1) even when broken.

- [c6] 5. Apparatus as claimed in claim 1 wherein said plastic stick is 16, 5 cm long per 4 mm thick and comprises:
an internal portion;
an external portion.
- [c7] 6. Apparatus as claimed in claim 5 wherein said internal portion has a distal enlargement close to the internal side of the tube (as claimed in claim 1), and comprises a 1,5 cm bulb-shaped nylon brush at its end.
- [c8] 7. Apparatus as claimed in claim 6 wherein said bulb-shaped brush comprises 7 mm long nylon bristles fixed to it, which, before use, are held within the tube (as claimed in claim 1) underneath the plastic membrane (as claimed in claim 3).
- [c9] 8. Apparatus as claimed in claim 6 wherein said bulb-shaped brush has two functions:
·to break the plastic membrane (as claimed in claim 3).
- [c10] ·to expand once outside the tube (as claimed in claim 1), and enter in contact with the cervix, thus collecting endocervical and cervical cells.

- [c11] 9. Apparatus as claimed in claim 5 wherein said external portion has a proximal end designed to be handled with fingers and pushed inside the plastic tube (as claimed in claim 1) so as to break the membrane (as claimed in claim 3) in order to release the brush (as claimed in claim 6) which expands in a semicircle and, entering in contact with the cervix, will collect the sample.
- [c12] 10. Apparatus as claimed in claim 5 wherein said external portion comprises an enlarged part at its proximal end that, entering in contact with the tube, functions as a stop and prevents excessive forward movement of the stick that might hurt the cervix.
- [c13] 11. A method for self-collecting free endocervical and cervical cells by a subject, medical or paramedical personnel, said method comprising the steps of:
Positioning the cell-collection apparatus (as claimed in claim 1) into the vagina to collect endocervical and cervical cells;
removing said apparatus from the vagina;
transferring the endocervical and cervical cell sample from the brush (as claimed in claim 6) onto a glass slide or into Thin-prep
fixing said endocervical and cervical sample on said glass slide with alcohol or cytological fixative;

and sending said glass slide to the pathologist or cytologist for conventional analysis.

- [c14] 12. A method as claimed in claim 11 wherein said positioning step comprises the step of:
inserting the distal end of said apparatus (as claimed in claim 2) deeply within the vagina for a pre-determined cell-collection interval.
- [c15] 13. A method as claimed in claim 11 wherein said positioning step comprises the step of:
pushing the proximal end of the stick (as claimed in claim 9) so that its distal end (as claimed in claim 6) breaks the membrane (as claimed in claim 3) and exposes the brush (as claimed in claim 6) to the cervix uteri.
- [c16] 14. A method as claimed in claim 11 wherein said positioning step comprises the step of:
rotating the proximal end of the stick to collect endocervical and cervical free cells by gently rubbing the cervix and the endocervix.
- [c17] 15. A method as claimed in claim 11 wherein said removing step comprises the step of:
pulling the proximal end of the stick to introduce the brush back into the tube.

- [c18] 16. A method as claimed in claim 11 wherein said removing step comprises the step of:
pulling gently the proximal end of the stick to remove the whole apparatus from the vagina.
- [c19] 17. A method as claimed in claim 11 wherein said transferring step comprises the step of:
pushing again the proximal end of the stick in order to expose the brush again.
- [c20] 18. A method as claimed in claim 11 wherein said transferring step comprises the step of:
transferring the endocervical and cervical cells from the brush onto a glass slide or into Thin-prep®.
- [c21] 19. A method as claimed in claim 11 wherein said fixing step comprises the step of:
fixing the sample on the glass slide with alcohol or cytological fixative or into Thin-prep®.
- [c22] 20. A method as claimed in claim 18 wherein said transferring step comprises the additional step of:
sending the glass slide containing the cell sample or the Thin-prep®receptacle to the pathologist or cytologist for conventional analysis.